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SUBJECT Processing and Routing of Documents Relating to Ship Repair in the Merchant Fleet

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1. Ship repair yards in practice are enterprises of a general purpose type which have a great number of diverse shops (tsekh) and specialties and which carry out from beginning to end all repair work encountered on ships.

2. Up to the present time, owing to the many types of ships, their equipment and the lack of a sufficient quantity of interchangeable spare parts and machinery in stock, the repair of each ship has been done individually, without the necessary organizational preparation. Thus, handicraft methods of work prevail and there are often times when, due to the breakdown of an individual machine or part, ships stand idle, waiting for the manufacture of a new part.

The following are examples illustrative of what has been said:

(a) The tugboat Leningrad, belonging to the Astrakhan Roadsteads Oil Tanker Steamship Agency (Reydtanker) was taken out of operation in 1939. The basic work to be done was to change the plating of the hull and to replace one boiler. By the beginning of World War II the hull of the steamship had been replaced, but they had to wait till 1949 for the boiler. During this same time there were several steam boilers at the shipyard in Tenth Anniversary of the October Revolution. These boilers were non-liquid assets, including one which was suitable for the tugboat Leningrad.

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However, use of the latter boiler was never authorized since all of the boilers on hand in the yard were earmarked for a steamship which had been under construction since 1935, but which in fact was never built. In 1940-41 construction of this steamship was deleted from the plan altogether, and in 1951 the hull which had been made for it had become covered with rust and overgrown with moss and tall weeds. In 1949 a boiler was obtained for the Leningrad, but the new hull had become completely worthless and the steamship had to be classified as permanently in disrepair. In 1951, the steamship Leningrad, half-sunken, was placed in Zolotoi Zaton, in Astrakhan. The local inhabitants had stolen its wooden parts for fuel and the other parts, which were still serviceable, had been removed by mechanics. The steam boiler which had been available is on a barge in the oil port in a bad condition due to disuse and is now listed as equipment in excess of allowance.

(b) The tanker Molotov of the Caspian Oil Tanker Steamship Agency (Kasptanker) with a cargo capacity of 10,000 tons was placed in capital repair in 1949. However, the tanker remained in repair nearly 300 days more than the planned period of time because of the bad and poorly timed preparation of technical documents.

(c) The steamship Mikoyan of the Caspian Dry Cargo Steamship Agency (Kaspflot), with a cargo capacity of 1200 tons, remained in repairs, in 1949, over 210 days above the planned time because of the poor supply of materials and parts. Similar occurrences are encountered in the majority of ship repair yards both in the Ministry of the Merchant Fleet and the Ministry of the River Fleet.

3. In the post-World War II years the Ministry of the Merchant Fleet (MMF) with special persistence began trying to find ways to shift over to new, more modern operational methods, which would increase the rate of repairs, and assure a curtailment of the time spent by ships undergoing overhaul. Included among these basic measures are the following:

(a) Standardization in the MMF (not an all-union standard) of main and auxiliary machinery, and also of interchangeable spare parts through specialization of the production of individual plants in certain equipment. This measure, if carried into effect, will, through effecting repairs by unit replacement of equipment (agregatnyy metod), afford a sharp reduction of idle time spent by ships undergoing overhaul. However, this measure did not receive mass dissemination because of the stagnation and bureaucracy in the central offices of the Ministry and because it was impossible for the ship repairs independently to improve their working methods. In this event a change of program for the yards is demanded.

(b) Introduction of speed-up methods of ship repair. This method has been most widely propagandized by the Ministry and by 1951 its introduction on a rudimentary scale was made mandatory. The speed-up method of ship repair, on the whole, depends on the initiative and state of organization of the collective of the enterprise, a fact which is most alluring for the central apparatus of the Ministry, since it relieves them of superfluous, brain-wracking work. In 1951 the introduction of speed-up repair actually was a propaganda dodge. Directors of the various yards publicly stated that repair of certain ships (usually one or two) would have to be carried out by speed-up methods. Speed-up repairs of one or two ships was carried out with a great deal of propaganda bluster, but 30 or 40 other ships stood idle in repair and the opening of the navigation season was delayed. All attention was to one or two ships by the expediter (skorostnik), the best workers were assigned to them, and materials were allotted under first priority.

(c) Ship repair with working forces from ships!
This repair is of two different types:

(1) With removal of the ship from operation, usually in the winter.

(2) Without removal of the ship from operation, the repairs being made either with the ship underway or between voyages while it is at anchor.

This method was a sort of counter-measure by the yard and steamship agency management against the introduction of spped-up repair. The self-repair method makes it possible to shift the entire burden of work from the shoulders of the managers to the shoulders of the enlisted mechanics, captains and group engineers. The regulation for ship repair by work forces of the ships' crews was worked out and it was put into effect by order of the Minister of the Merchant Fleet as a model regulation for all organizations of the Ministry of the Merchant Fleet.

4. The problem of processing technical documents has always been acute in the Merchant Fleet. Prompt and technically competent compilation of technical documents for ship repairs has been lacking. Repair records were sometimes compiled by temporary personnel or by analogy with old records. Furthermore it was almost impossible to obtain price lists or manuals on estimates. From 1950 on, the Ministry had begun to pay serious attention to the processing of technical documents for ship repair and required an absolute check on their prompt and correct compilation. In this report the procedure in the processing and movement of technical documents for ship repair. 25X1

5. The initial documents involved in the repair of a vessel and which must be available on each ship are: 25X1

(a) Log books for recording defects, both of the hull and of the mechanical parts.

(b) Results of preventive inspections.

(c) Measurement of the wear on parts.

All data which describe the mechanical condition both of the various parts and elements of the ship are entered systematically in these documents, in the course of the ship's operations. From these documents one can see what defects have arisen on the ship, those which have been eliminated, and those which are yet to be eliminated. The quality of subsequent repair documents depends on the completeness and quality of the entries in these documents. These initial documents are found on board ship, in the Department of the Ship-Mechanics Service and also in the inspectorate of the Maritime Registry (Morskoi Reyistr).

6. Records of all defects are kept on each ship. The defects are extracted from the log for recording defects, from entries of the results of preventive inspections and from the measurement of wear on parts (items a, b, c, above in paragraph #5), and are entered in the so-called record of defects (defektnaya vedomost'). Defects are grouped in the following order:

(a) Main engines and boilers.

(b) Engines, deck auxiliary machinery and pipeline systems.

(c) Electrical equipment and radio equipment.

(d) The hull, living and service spaces (holds, tanks, mess halls, heads, etc).

The character and amount of work involved in repairing each defect are shown in the record. For example, replace 40 square meters of six mm steel plating on the hull between the 20th and the 25th ribs on the starboard side; or, rebabbitt six journal bearings on the port intermediate shaft (promezhutochnyy val) with diameter of 200 mm. Bearings #4, #5, #6, #7, #9, #10. Coatings 8-91 tin babbitt.

The records are compiled by the senior mechanic and the captain of the ship. Usually the senior mechanic entrusts the compilation of the record to the assistants assigned to the branches (2nd mechanic - main engines; 3rd mechanic - boilers and steam pipelines; 4th mechanic - deck machinery and auxiliary engines). The record of defects is coordinated with the group engineer of the department of ship-mechanics service of the steamship agency to which the particular ship is assigned. A group engineer provides technical services for a group of ships, which group is determined by the specialty of the engineer, i e Diesel, steam, barges, etc. The group engineer must carefully check the planned volume of work which has been entered in the records. Superfluous work or padding of the work volume as compared with what is actually needed leads to a rise in the estimated cost of repair. This in turn gives the yard performing the work opportunities for abuses (such as getting excess money for repair work from the steamship agency and giving exaggerated indices for fulfillment of the plan). In the case of fulfillment of the repair plan by working forces of the ships' crews, such padding would afford the opportunity to the ships' crews of earning easy money. Subsequently the record of defects must be coordinated with the yard performing the work through the yard technologist or the chief of the estimator group. The record of defects is kept on board ship and in the hands of the department of the ship-mechanics service of the steamship agency.

7. The repair record (remontnaya vedomost') is the next step in the documentation of ship repair work. After the record of defects has been revised completely, the process of compiling the repair record is begun. The repair record is compiled by the estimator group of the yard performing the work in the event it is yard repair work. If it is ship repair by working forces from the crew, the record is compiled in the ship-mechanics service of the steamship agency. A uniform repair record has been established for each ship and the form consists of the following elements:

(a) Repair record for the hull

(b) Repair record for mechanical parts

(c) Repair record for electrical equipment

(d) Additional repair record (in case additional work arises not recorded in the record of defects)

Each of these items consists of the total amounts for:

(a) Labor costs

(b) Costs of materials

(c) Overhead expenses

Usually in order to compile the repair record there must be available the "Manual on Cost Figures for Repair Records", which indicates the amount of labor required for a particular job and the quantity of materials (in terms of consolidated indices). Besides this, there must be available a price list for ship repair materials. However, there are almost no manuals on cost figures in the Ministry of the Merchant Fleet (MMF), or, if there are, they are only for individual jobs. In order to figure costs for the repair records, the estimators usually are obliged to use the "Handbooks of Norms and Price Rates for Workers" on ship repair work and also price lists. Figuring costs from manuals takes considerable time since the outlay of working time is broken down by individual small scale operations. After the estimator has calculated the repair record, it has to be signed by the local inspectorate of the maritime registry and the following officials of the shipyard: the chief of the estimator group, the chief of the planning and production department and the chief engineer. Thereupon the record goes to the steamship agency where it is signed by the captain and senior mechanic of the ship, by the group engineer of the ship-mechanics service within whose specialty it falls, and it then must be approved by the chief of the ship-mechanics service. The repair records are kept in the ship-mechanics service of the steamship agency and in the yard performing the work.

8. After processing of the repair record has been completed, the compilation of the estimate for ship repair begins. As a rule, four estimates are compiled.

(a) Estimate for capital repair

(b) Estimate for medium repair

(c) Estimate for routine repair

(d) Estimate for ship repair by working forces from the crew

The total outlay only for each ship is cited separately in the estimates (without a breakdown for the jobs technologically). Funds for ship repair are requisitioned by estimate. The estimate for ship repair is signed by the following officials in the steamship agency: the compiling engineer of the branch of the ship-mechanics service for ship repair, by the chief of the ship-mechanics service, by the chief of the planning department, by the chief of the department of labor and wages, by the chief engineer, and then by the chief of the agency. The estimate next goes to the glavk exercising jurisdiction. In the glavk the estimate is checked by the chiefs of the planning and technical departments and if enough money for the ship repair has been allotted to the particular steamship agency to pay for the estimate, then these persons sign it and give it to the chief engineer and the chief of the glavk for approval. An estimate for capital repair must also be approved by the chief of the planning and economic department of the ministry and thereafter it goes to the minister for approval.

9. In practice, approval of the estimate is effected otherwise. Appropriations for ship repairs are not allotted, on the basis of actual requirements but are considerably reduced. Then an order is written on the estimate: "Bring the estimate into conformity with the sum of (blank) rubles appropriated by the government". The estimate goes back to the steamship agency, where a correction of the repair record is made for the purpose of adjusting the sum of the estimate to the amount of the appropriation. It often happens that necessary repair jobs have to be eliminated to the detriment of the future technical condition of the ships. This situation results in ships operating on the verge of breakdown, called na izmos. Over-expenditure of money is not permitted, nor is transferring funds between items on an approved estimate authorized. After approval in the Ministry, the estimate comes to the steamship agency and the yard which will perform the work. The original of the estimate is kept in the secret department of the steamship agency. Copies, with the legal character of secret documents, are to be found in the possession of the chief engineer, the chief of the ship-mechanics service, the chief of the planning department, the chief of the department of labor and wages and the chief accountant.

10. Contracts between the repair yard and the client are formulated in certain cases. If the ship repair yard is subordinated to the steamship agency, no contract for ship repairs is concluded between them. In this case the steamship agency by directive instructs the yard to start the ship repairs and to complete them within a defined time limit. An analogous procedure for handing ships over to a shipyard for repair occurs if the yard is subordinated to the same glavk as the steamship agency, yet not directly subordinate to the agency. In this case the steamship agency compiles the draft order for ship repairs, and the chief of the glavk signs it. In some cases the ship repair yard is subordinated neither to the steamship agency nor to the same glavk as the agency, but to some other glavk, for example, the Chief Directorate of Marine Industry (Glavmorprom) or the Chief Directorate of Machinery Construction Enterprises (Glavmashprom). The steamship agency then must conclude a contract for ship repair with the yard. There are two types of such contracts, a general contract and a local contract. The contract is concluded for a single ship or for a group of ships, depending upon the category of repair work involved.

11. In these contracts the mutual rights and obligations of the parties are set forth. The usual terms found in such contracts are:

(A) Responsibilities on the part of the steamship agency

(1) Making the ship ready and putting it into repair promptly (processing of estimate documents, plans, diagrams, dismantling (razoruzhenie) and cleaning of the ship)

(2) Prompt supply of ship repair materials (if by contract the steamship agency is to supply them)

(3) Prompt transfer to the jurisdiction of the yard of those crew members who have ship repair specialties

(4) Assuring the constant control over the progress of the ship repairs

(5) Supplying the necessary small craft to deploy and rearrange the group of ships (karavan) in repair (normally occurring during the winter months when there is no navigation)

(6) Making provision for ice-breaking and all-hands job for the group of ships (karavan) in repair. This would also occur during winter repair operations when numerous ships are tied up alongside one another.

(7) Prompt carrying out of work involved in acceptance as the ships are finished

(8) Making prompt monetary settlements for ship repair work

(9) Prompt removal of repaired and accepted ships from the quays of the shipyard.

(B) Responsibilities on the part of the shipyard

(1) Prompt carrying out of ship repairs in conformity with the time limits and schedules laid down in the directive

(2) Assuring the requisite quality of the ship repairs

(3) Provision of guards for ships at the quays of the shipyard

(4) Assuring timely delivery of repaired ships to the client

(C) Regulations binding on both parties

(1) All questions connected with unforeseen jobs on a ship, ie jobs not envisaged by the repair record but arising in the course of repair, are to be approved by the yard jointly with the client and representatives of the Maritime Registry

(2) All repair of ships must be carried out under the supervision of representatives of the Maritime Registry

(3) The instructions of the representatives of the Maritime Registry are to be carried out completely in the course of repair and at the time of delivery of repaired ships to the client

(4) In the contract there may be a stipulation for the payment of a bonus to the shipyard by the client in the event that ships are released from repair ahead of time and for imposing a penalty on the shipyard by the client in the event of tardy release of ships from repair

(5) All disputes between the client and the yard are to be decided by departmental procedure

12. There are specific time schedules established for ship repair work. Before a ship is placed in repair the shipyard, jointly with the client, must make up schedules of work. These schedules stipulate the time limits for completion of work, by elements, for each ship and are approved by the yards jointly with the senior mechanics and ship captains. These working schedules are coordinated with the ship-mechanics service of the steamship agency. Depending on circumstances, necessary corrections can be made in the working schedules during the course of the work, but only within the limits of the directive schedule. The results of schedule fulfillment must be added up every ten days.

13. In the Ministry of the Merchant Fleet a number of the ships have been transferred to the principles of business accountability (khozraschet). These particular ships have books kept on the expenditures borne by them and the revenues received as a result of shipping operations. In order to record the expenditures borne by a ship the captains are issued special quota books (limitnyye knizhki) of two types: the present time in the Merchant Fleet, daily expenditures for repairs are recorded only for those ships being repaired by the crew. There is no daily record for ships being repaired in the yards. There were attempts to introduce this kind of bookkeeping for the repair records, but this turned out to be hardly feasible owing to the lack of personnel. Repair expenditures of ships operating on the principles of business accountability (khozraschet) are not computed until repair is completed and they are recorded as a total under "expenditures for ship repair" for those ships which have been in shipyard repair. For ships whose crews are performing the repair work the following expenses are regularly recorded:

(a) Wages

(b) Crews' rations

(c) Materials

(d) Spare parts and components

(e) Shipyard services

(f) Miscellaneous expenses

14. An order (zakaz) and a work order (naryad) are two basic documents involved in ship repair work. A zakaz is an order to the planning and production department of a repair yard. The zakaz states the work to be done, the specifications, the time set for completion and the quantities to be manufactured. A work order (naryad) is directed to the workers by the shipyard and contains the units to be made, the norms involved and the costs. Each naryad is kept on file by the chief accountant for the ship repair yard. Before the ship is put into the quay of the shipyard, but after the approved repair record is available, the ship-mechanics service of the client steamship agency submits a zakaz to the yard. This zakaz calls for the manufacture of various parts and semi-finished materials as well as for repair jobs by elements in conformity with the repair record. The zakaz passes through the planning and production department of the yard and is received in the workshops of the yard in the form of a naryad. In the naryad issed to the workers for a particular job, it is mandatory to quote the number of the zakaz. A naryad which does not carry the number of the authenticating zakaz is invalid and will not be paid. The zakazes are control documents (besides being the basis for the working documents of the shop chiefs) which make it possible for the shipyard to keep check on the shop chiefs and foremen. This prevents the latter officials from giving excess or unnecessary work to the yard workers. It also prevents the shop chiefs and foremen from drafting false naryads so as to increase the pay of the workers for work actually not fulfilled.

15. Certificates of percentage (akty protsentovki) of work fulfilled are used as a check on the fulfillment of ship repair work. Periodically, once or twice a month (depending on the terms of the contract) the client and the contractor check on the progress of the ship repairs and determine the extent to which the ships are finished. The results of the inspection are recorded in the certificate of percentages of work fulfilled which is signed by the representatives of the client steamship agency and the repair yard. The certificate with the joint signatures serves as the basis for the shipyard presenting the client with a bill for repair jobs already completed and for giving a report on the fulfillment of the ship repair plan for a particular period of time. The certificate of percentage of work fulfilled is checked by the representatives of the local inspectorate of the Maritime Registry.

16. The certificate of acceptance of a ship from repair is a further document required in the repair of MMF vessels. On the completion of ship repairs the client jointly with the local inspectorate of the Maritime Registry must accept the ship. The acceptance of the ship takes place in two stages, in both of which the representative of the Maritime Registry plays the dominating role.

(a) First stage of acceptance involves the following elements: Preliminary acceptance of the ship takes place at the yard and dock trials (shvartovyye ispytaniya) are held. At this time a careful inspection of the whole ship is carried out by way of dock trials and the quality of the work both on the machinery and on the hull is determined. If the yard inspection shows satisfactory results, the dock trial with all of the machinery in operation is conducted while the ship is still at its berth. If the operation of the main and auxiliary machinery shows satisfactory results, then the first part of the certificate of acceptance of a ship from repair is drawn up, and the ship is cleared for the second stage of acceptance.

(b) Second stage of acceptance includes the following items: If necessary, the representatives of the client, the repair yard and the representatives of the Maritime Registry make tests of all the ship's machinery in operation. The tests of the ship's operation include: the speed of the ship for a measured mile, maneuverability, turning radius (sirkulatsiya) and reversing gear. If the speed tests show satisfactory results, the certificate of acceptance of the ship from repair is filled in completely and is signed by the representatives of the yard, the client and the Maritime Registry. The representatives of the latter activity enter in the certificate their appraisal of the quality of the repair, i e excellent, good or satisfactory. A ship is not accepted from repair in the event of a rating of less than satisfactory. The vessel cannot be accepted unless the representative of the Maritime Registry approves of the quality of the work.

17. The certificate of delivery of the ship into operations is the final stage of the documentation involved in ship repair work. As a rule, this certificate is drawn up by the ship-mechanics service and operations service of the steamship agency. The former releases the ships from repair when they are fit for operations, while the latter accepts the vessels for operations. The certificate of delivery is drawn up among the representatives of the Maritime Registry, the Port Supervision (Portovyy Nadzor), the Militarised Guard (Vokhr), the Medical Supervision (Sanitarnyy Nadzor) and the Accident Prevention (Tekhnika Bezopasnosti) activities. A ship, in order to be released to operations, must be completely equipped and provided with fire fighting apparatus and it must also meet the requirements of the agencies of medical supervision and accident prevention. After the certificate of delivery of a ship to operations is signed, the ship is free to leave on a voyage.

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